

DOCKET: CU-2801

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Pierre BERNARD et al.)
SERIAL NO: 10/030,398) Group Art Unit: 3738
FILED: September 12, 2002) Examiner: T. C. Barrett
TITLE: ANATOMIC INTERSOMATIC IMPLANT, AND FORCEPS FOR
MANIPULATING SUCH AN IMPLANT

AMENDED CLAIMS

1. (Currently Amended) An intersomatic implant designed to be inserted in the disk space defined between two adjacent vertebrae, namely an overlying vertebra and an underlying vertebra, for the purpose of reestablishing the anatomic space between the vertebrae, the implant being in the form of a cage ~~(1)~~ that is generally in the space of a rectangular block having at least two sagittal walls ~~(2, 3)~~ substantially parallel to a sagittal plane ~~(S)~~ and interconnected at least by an anterior transverse wall ~~(4)~~ and by a posterior transverse wall ~~(5)~~ extending substantially parallel to a frontal plane ~~(F)~~, the walls ~~(2 to 5)~~ defining between them an open volume ~~(7)~~ for bone filler and presenting rims ~~(10, 10')~~ extending on one surface to define a first transverse face ~~(8)~~ and on the opposite surface to define a second transverse face ~~(9)~~,

~~the implant being characterized in that:~~

wherein the first transverse face ~~(8)~~ presents in the sagittal plane a first convex profile ~~(C_s)~~ congruent with the sagittal anatomic profile of an overlying vertebra, and the first transverse face is defined in the frontal plane by a first substantially straight profile;

wherein the second transverse face presents in the frontal plane a second convex profile ~~(C_f)~~ congruent with the frontal anatomic profile of an overlying vertebra, and the second transverse face presents in the sagittal plane a second substantially straight profile; and

wherein the first and second convex profiles ~~(G_s, G_f)~~ of each transverse face ~~(8, 9)~~ is defined by protuberances ~~(11)~~ formed on the rims ~~(10, 10')~~ of the sagittal and frontal walls.

2. (Currently Amended) An implant according to claim 1, ~~characterized in that~~ wherein the rims ~~(10, 10')~~ of the sagittal and frontal walls carry protuberances ~~(11)~~ forming ridges extending parallel to one another and to the frontal plane ~~(F)~~.

3. (Currently Amended) An implant according to claim 1 ~~or claim 2~~, ~~characterized in that it has~~, further comprising at least one radio-opaque marker ~~(13)~~ extending over at least a portion of the height of a wall.

4. (Currently Amended) An implant according to ~~any one of claims 1 to 3~~, ~~characterized in that it has~~ claim 1, further comprising two housings for receiving the jaws ~~(17)~~ of a manipulation forceps, the housings extending substantially facing each other in a frontal direction perpendicular to the sagittal plane ~~(S)~~ of the cage.

5. (Currently Amended) An implant according to claim 4, ~~characterized in that~~ wherein each housing opens out at least to the external face of one of the sagittal walls ~~(2, 3)~~.

6. (Currently Amended) An implant according to claim 4 ~~or claim 5~~, ~~characterized in that~~, wherein the walls are arranged to include antirotation means ~~(23)~~ for co-operating with complementary means ~~(24)~~ arranged on the jaws ~~(17)~~ of the manipulation forceps so that, when the cage is engaged by the forceps, the cage is prevented from moving relative to the forceps.

7. (Currently Amended) An implant according to claim 6, ~~characterized in that~~ wherein each housing ~~(20)~~ opens to the sagittal walls ~~(2, 3)~~ in a respective groove ~~(23)~~ extending to the external face of the anterior wall so as to constitute the antirotation means and so as to enable the jaws of a manipulation forceps to be inserted.

8. (Currently Amended) Manipulation forceps for an implant ~~according to any one of claims 1 to 7~~, the implant being in the form of a cage ~~(1)~~ that is generally in

the shape of a rectangular block ~~comprising~~ having at least two sagittal walls ~~(2, 3)~~ substantially parallel to a sagittal plane ~~(S)~~ and interconnected at least by an anterior transverse wall ~~(4)~~ and by a posterior transverse wall ~~(5)~~ substantially parallel to a frontal plane ~~(F)~~, the cage being provided with two housings ~~(20)~~ extending substantially facing each other in a frontal direction ~~(F)~~ substantially perpendicularly to the sagittal plane of the cage, the forceps ~~having~~ comprising two branches ~~(16)~~ movable relative to each other and each provided with an insert-engaging jaw,

~~the forceps being characterized in that~~

each jaw ~~(17)~~ being provided with a radial stud extending in line with the other radial stud ~~(21)~~ and suitable for being moved towards the other stud so as to be engaged in a respective housing ~~(20)~~ formed in the implant.

9. (Currently Amended) Manipulation forceps according to claim 8, ~~characterized in that~~ wherein the jaws ~~(17)~~ are arranged to present antirotation means ~~(24)~~ complementary to means ~~(23)~~ provided on the cage so as to enable the cage to be prevented from moving relative to the forceps.

10. (Currently Amended) Manipulation forceps according to claim 9, ~~characterized in that~~ wherein each jaw ~~(17)~~ includes, as its complementary antirotation means ~~(24)~~, an arm which is provided at its end with a radial stud ~~(21)~~ and which is designed to be engaged, at least in part, in a groove ~~(23)~~ formed in a sagittal wall and extending from the housing ~~(20)~~ to the external face of the anterior wall ~~(4)~~.

11. (Currently Amended) Manipulation forceps according to ~~any one of claims 8 to 10~~, ~~characterized in that~~ claim 8, wherein each jaw ~~(17)~~ is provided with a stop abutment ~~(27)~~ for coming into contact against the external face of the anterior transverse wall ~~(4)~~ of the cage when the studs ~~(21)~~ are engaged in the housings ~~(20)~~ so as to transmit forces exerted on the forceps.

12. (Currently Amended) Manipulation forceps according to claim 11, ~~characterized in that~~ wherein each stop abutment ~~(27)~~ is arranged on a jaw ~~(17)~~ so

as to come into contact with the external face of the anterior transverse wall ~~(4)~~ of the cage substantially in line with the sagittal walls ~~(2, 3)~~.

13 (Currently Amended) Manipulation forceps according to claim 8, characterized in that wherein the jaws ~~(17)~~ are urged towards each other by the branches ~~(16)~~.